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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GILLIAM, BARBARA LEE

ART UNIT	PAPER NUMBER
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1752

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DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/067,862

Applicant(s)

TAN ET AL.

Examin r

Barbara Gilliam

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-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2002 .
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-18,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 8 and 11-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims

1. Claims 1-21 are pending.
2. Claims 8 and 19 have been interpreted in light of the specification at page 42, lines 12-21.

The fluoroaliphatic polymer of the image forming layer of Claim 8 comprises a repeating unit corresponding to at least one of a poly(oxyethylene) acrylate and a poly(oxyethylene) methacrylate in addition to the repeating unit corresponding to monomer (i) and the repeating unit corresponding to monomer (ii).

The fluoroaliphatic polymer of the image forming layer of Claim 19 comprises a repeating unit corresponding to at least one of a poly(oxyethylene) acrylate and a poly(oxyethylene) methacrylate in addition to the repeating unit corresponding to monomer (i), the repeating unit corresponding to monomer (ii) and the repeating unit corresponding to monomer (iii).

3. In Claims 9, 10, 20 and 21, the fluoroaliphatic group containing polymer is not listed as a component of the photosensitive layers however it is clear that the respective fluoroaliphatic group containing polymers are present in the photosensitive layers. The photosensitive layer of claims 9 and 10 is the image forming layer of claim 1 which comprises the fluoroaliphatic group containing polymer. The photosensitive layer of claims 20 and 21 is the image forming layer of claim 11 which comprises the fluoroaliphatic group containing polymer.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

5. The use of the trademarks including KRAFT G(N) (at page 152, line 24), MARCA LINKER M S-4P (at page 153, line 25) and TRENDSETTER 3244VFS (at page 168, line 10) have been noted in this application. They should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

6. Claims 11-21 are objected to because of the following informalities:

In Claim 11, monomer (iii), represented by formula (2), comprises R_1 but no definition of R_1 is given. R_3 is defined instead. In the specification formula (2) comprises R_3 which is defined. For consistency purposes, the Examiner suggests changing R_1 to R_3 in formula (2) of Claim 11. Because R_1 and R_3 have the same definition, changing R_3 to R_1 in the definition of formula (2) would also be acceptable.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-7, 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorori et al. in view of Nishioka et al.

a. In US 2002/0055058 A1, Sorori et al. teach a lithographic printing plate precursor comprising an image forming layer containing at least one polymer compound having fluoroaliphatic groups on the side chain represented by formula (1) (claim 8). This polymer compound can contain a monomer represented by formula (2) (claim 10). The fluoroaliphatic monomer of formula (1) of the present lithographic printing plate precursor is obvious from the fluoroaliphatic monomer of formula (2) of Sorori et al. when R_1 is a hydrogen atom or a methyl group, X is a single bond, R_2 and R_3 are hydrogen atoms, m is 1 to 6 and n is 2 or 3. Y_o , a divalent organic group meets the present limitations for X. Y_o can be -O-, -S-, -N(R_4)- or CO wherein R_4 is hydrogen or a C1-C4 alkyl group (page 8, paragraph [0071] & page 7, paragraph [0064]). The polymer compound of Sorori et al. is preferably used as a copolymer with a monomer having a polyoxyalkylene group such as polyoxyethylene group, polyoxypropylene group, polyoxybutylene group. The molecular weight of the polyoxyalkylene group is preferably from 500 to 3,000 and the polyoxyalkylene group unit preferably occupies 10 mol % or more in the polymer compound (page 11, paragraph [0081]). Sorori et al.

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references the specific examples of several Documents including JP-A-62-170950. In JP-A-62-170950, Nishioka et al. teach a fluorine containing surface active agent copolymer comprising fluorinated aliphatic groups and poly(oxyalkylene)acrylate or poly(oxyalkylene)methacrylate groups (abstract). The poly(oxyalkylene) acrylate and poly(oxyalkylene) methacrylate groups meet the present limitations for monomer (ii). Sorori et al. do not teach the specific molecular weight of the fluoroaliphatic monomer, however the average molecular weight of the entire polymer is 3,000 to 200,000 (page 4, paragraph [0042]) and the molecular weight of the polyoxyalkylene monomer is preferably from 500 to 3,000 (page 11, paragraph [0081]). Therefore when the fluoroaliphatic polymer of the Sorori et al. is present as a copolymer with polyoxyalkylene monomers, the average molecular weight of the fluoroaliphatic monomer is in the range of 2,500 to 199,500. The amount of the fluoroaliphatic group-containing monomers is 1 % or more based on the polymer weight, preferably 3 to 70 wt % and more preferably 7 to 60 wt % (page 11, paragraph [0079]). The amount of the fluoroaliphatic polymer is 0.001 to 10 wt % of the image forming layer composition (page 15, paragraph [0117]). The printing plate precursor of Sorori et al. can comprise an aluminum substrate and the image forming layer can be a photosensitive layer comprising a light-heat converting agent and a binder resin wherein the solubility of the photosensitive layer can increase or decrease in an alkaline developer upon exposure to laser beams (claim 15). Alternatively the photosensitive layer can comprise a light-heat converting agent, a heat radical generator and a radical polymerizable compound wherein solubility of the photosensitive layer decreases in an alkaline developer upon exposure to laser rays (claim 16).

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b. Therefore it would have been obvious to one of ordinary skill in the art to make a lithographic printing plate precursor comprising an image forming layer wherein the image forming layer contains a fluoroaliphatic copolymer with a fluoroaliphatic monomer represented by formula (2) and a poly(oxyalkylene)acrylate or poly(oxyalkylene)methacrylate monomer based on the teachings of Sorori et al. in view of Nishioka et al. with reasonable expectation of obtaining a lithographic printing plate precursor with high uniformity and high hydrophobicity in the image area upon exposure and development based on the teachings of Sorori et al. (page 1, paragraph [0003], lines 11-15; page 2, paragraph [0011], lines 12-16; page 3, paragraph [0032]).

9. Claims 11-18, 20 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Sorori et al. in view of Nishioka et al. as applied to claims 1-7, 9-10 above, and further in view of Kawamura et al. and Yamasaki et al.

a. As indicated in the previous rejection under 35 USC 103(a) over Sorori et al. in view of Nishioka et al., a lithographic printing plate precursor comprising an image forming layer containing at least one polymer compound having a fluoroaliphatic groups on the side chain represented by formula (1) is taught (claim 8). This polymer compound can contain a monomer represented by formula (2) (claim 10). The fluoroaliphatic monomer of formula (1) of the present lithographic printing plate precursor is obvious from the fluoroaliphatic monomer of formula (2) of Sorori et al. when R_1 is a hydrogen atom or a methyl group, X is a single bond, R_2 and R_3 are hydrogen atoms, m is 1 to 6 and n is 2 or 3. Y_o , a divalent organic group, meets the present limitations for X . Y_o can be $-O-$, $-S-$, $-N(R_4)-$ or CO wherein R_4 is hydrogen or a

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C1-C4 alkyl group (page 8, paragraph [0071] & page 7, paragraph [0064]). The polymer compound of Sorori et al. is preferably used as a copolymer with a monomer having a polyoxyalkylene group such as polyoxyethylene group, polyoxypropylene group, polyoxybutylene group. The molecular weight of the polyoxyalkylene group is preferably from 500 to 3,000 and the polyoxyalkylene group unit preferably occupies 10 mol% or more in the polymer compound (page 11, paragraph [0081]). Sorori et al. references the specific examples of several Documents including JP-A-62-170950. In JP-A-62-170950, Nishioka et al. teach a fluorine containing surface active agent copolymer comprising fluorinated aliphatic groups and poly(oxyalkylene)acrylate or poly(oxyalkylene)methacrylate groups (abstract). The poly(oxyalkylene) acrylate and poly(oxyalkylene) methacrylate groups meet the present limitations for monomer (ii). The polymer can copolymerize with a monomer having an acidic hydrogen atom (page 11, paragraph [0082]). The monomer having such an acidic hydrogen atom can be a vinyl monomer having an unsaturated group capable of radical polymerization. Among the preferred vinyl monomers are acrylate and methacrylate. Preferred examples of acrylate and methacrylate vinyl monomers are described in JP-A-10-142778 (page 12, paragraph [0086]). Neither Sorori et al. or Kawamura et al. (JP 10-142778) teach specific acrylate or methacrylates. The Examiner asserts this generic teaching of acrylates and methacrylates include the acrylates and methacrylates that are conventionally used in the printing plate art including those of Yamasaki et al.

b. In US 6,242,155 B1, Yamasaki et al. teach a photopolymer composition for recording by exposure to infrared laser beams comprising a polymer having at least either carboxylic acid or carboxylate groups (abstract). The polymer may be a

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copolymer having different repeating units derived from other monomers such as acrylic acid esters including methyl acrylate, ethyl acrylate, propyl acrylate, butyl acrylate, amyl acrylate, allyl acrylate and phenyl acrylate and methacrylic acid esters including methyl methacrylate, ethyl methacrylate, propyl methacrylate, butyl methacrylate, amyl methacrylate and allyl methacrylate (column 12, line 51 – column 13, line 28). The acrylates and methacrylates of Yamasaki et al. meet the present limitations for monomer (iii) of formula (2) in claim 11 when Y is the divalent oxygen group –O–.

c. Therefore it would have been obvious to one of ordinary skill in the art to make a lithographic printing plate precursor comprising an image forming layer wherein the image forming layer contains a fluoroaliphatic copolymer with a fluoroaliphatic monomer represented by formula (2) in Sorori et al. and a poly(oxyalkylene)acrylate or poly(oxyalkylene)methacrylate monomer and a conventional acrylate monomer such as butyl acrylate based on the teachings of Sorori et al. in view of Nishioka et al. and Yamasaki et al. with reasonable expectation of obtaining high uniformity and high hydrophobicity in the image area of the lithographic printing plate upon exposure and development based on the teachings of Sorori et al. (page 1, paragraph [0003], lines 11-15; page 2, paragraph [0011], lines 12-16; page 3, paragraph [0032]).

Allowable Subject Matter

10. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

a. There is no teaching or suggestion in Sorori et al., Nishioka et al. or Yamasaki et al. to use more than one poly(oxyalkylene) monomer in the copolymer of Sorori et al. (page 11, paragraph [0081]) wherein one of the poly(oxyalkylene) monomer is specifically poly(oxyethylene) acrylate (or poly(oxyethylene) methacrylate) as required in the present claim.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. In commonly assigned US 2003/0073034 A1, Tan et al. teach a lithographic printing plate precursor comprising a support and an image forming layer including a fluoroaliphatic group containing copolymer wherein the fluoroaliphatic group-containing polymer contains as repeating units, a fluoroaliphatic group-containing monomer represented by formula (I) and at least one of a poly(oxyalkylene)acrylate and a poly(oxyalkylene)methacrylate (claim 1). Four fluoroaliphatic groups $-(CF_2-CF_2)_4-$ are required to be present in the monomer

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represented by formula (I). In the present application 2 or 3 fluoroaliphatic groups are present in the fluoroaliphatic monomer. JP 2002-296774 A and EP 1 246 012 A2, are in the same patent family as US 2003/0073034 A1.

b. In US 6,110,640, Kawamura et al. teach a positive working photosensitive composition comprising a specific fluorine-containing copolymer (abstract).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Gilliam whose telephone number is 703-305-1330. The examiner can normally be reached on Monday through Friday, 8:00 AM - 6:00 PM.

a. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 703-308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

b. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Barbara Gilliam
Examiner
Art Unit 1752

bg
June 16, 2003